

QP Code:129380

Reg. No.:.....

**First Year MHA Degree Regular/Supplementary Examinations
September 2025
Operations Research
(Common for 2013 and 2016 Scheme)**

Time: 3 Hours

Max Marks: 100

- Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space
- Answer all parts of a single question together • Leave sufficient space between answers
- Draw table/diagrams/flow charts wherever necessary • Simple calculator shall only be permitted

Essays:

(2x20=40)

1. Solve the following LPP using Simplex Method

$$\text{Max. } Z = 5x + 3y$$

Subject to

$$x + y \leq 2$$

$$5x + 2y \leq 10$$

$$3x + 8y \leq 12$$

$$x, y \geq 0$$

2. A stockist has to supply 400 units of a product every Monday to his customer. He gets the products at ₹50/unit from the manufacturer. The cost of carrying is 7.5% per year of the cost of the product and ordering cost is ₹75 per order.

Find (i) Economic Lot size (ii) Time between successive orders (iii) No. of orders per year and (iv) Optimum Total Cost

Short Essays:

(2x10=20)

3. Explain constituents of queue system. Discuss uses of queueing theory in health care.
4. What is decision theory. Explain different types of decision environment.

Short notes:

(8x5=40)

5. Discuss the advantages of Operations Research.
6. Write a note on Sensitivity Analysis.
7. Explain steps in Vogels Approximation method.
8. Discuss the role of Inventory theory in Hospitals.
9. What is game. How to solve a game problem.
10. Distinguish between PERT and CPM.
11. Explain Float and Slack.
12. Write a note on Replacement theory.
